

Appl. No. 10/749,337
Amtd. Dated June 28, 2007
Reply to Office Action of April 4, 2007

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Amendments to the Claims

This listing of claims will replace the prior version and listing of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A separation membrane for a rechargeable battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral triangle units, each of which has the equilateral triangle units comprises three lithium ions and a carbon atom, each of the three lithium ions is respectively at a corresponding one of the three vertexes thereof of the equilateral triangle unit, and a carbon atom is at a center thereof of the equilateral triangle unit.

Claim 2 (original): The separation membrane as described in claim 1, wherein the number of the composite layers is in the range from 5 to 20.

Claim 3 (original): The separation membrane as described in claim 2, wherein the number of the composite layers is 10.

Claim 4 (original): The separation membrane as described in claim 1, wherein a thickness of each of the composite layers is in the range from 500 nanometers to 500 microns.

Claim 5 (original): The separation membrane as described in claim 4, wherein the thickness of each of the composite layers is approximately 100 microns.

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Claim 6 (currently amended): The separation membrane as described in claim 1, wherein a thickness ~~thereof~~ of the separation membrane is approximately 1 millimeter.

Claim 7 (original): The separation membrane as described in claim 1, wherein a length of each side of each of the equilateral triangle units is in the range from 25 nanometers to 100 nanometers.

Claim 8 (original): The separation membrane as described in claim 1, wherein the composite layers are attached to each other with adhesive.

Claim 9 (currently amended): A separation membrane for a battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral hexagon units, each of which ~~has~~ the equilateral hexagon units comprises six carbon atoms and six lithium ions, each of the six carbon atoms is respectively located at a corresponding one of the six vertexes thereof of the equilateral hexagon unit, and the six lithium ions are intercalated therein in a center of the equilateral hexagon unit.

Claim 10 (original): The separation membrane as described in claim 9, wherein a length of a diagonal of each of the equilateral hexagons is in the range from 50 to 200 nanometers.

Claim 11 (original): The separation membrane as described in claim 10, wherein the length of the diagonal of each of the equilateral hexagons is approximately 100 nanometers.

Claim 12 (currently amended): A separation membrane for a

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rechargeable battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral triangle units arranged in an alternative/staggered manner so as to form a hexagonal extension thereof, wherein each of the equilateral triangle units has comprises three lithium ions and a means, each of the three lithium ions is respectively at a corresponding one of the three vertexes thereof of the equilateral triangle unit, and the means of the equilateral triangle unit is configured for attracting said three lithium ions at towards a center thereof of the equilateral triangle unit.

Claim 13 (currently amended): The separation membrane as described in claim 12, wherein said means is at least one of carbon, ~~or~~ silicon, and ~~or~~ germanium.

Claim 14 (original): The separation membrane as described in claim 12, wherein each of said molecular layers defines silicon carbide, or silicon oxide, or compositions of carbon and silicon carbide, and or compositions of silicon and germanium thereof.

Claim 15 (original): The separation membrane as described in claim 12, wherein a diagonal of each equilateral hexagon of said hexagonal extension, which passes through a center thereof, is in a range of 50 nanometers to 200 nanometers.

Claim 16 (currently amended): The separation membrane as described in claim 12, wherein each of said equilateral triangle units is nanosized.